

ABSTRACT OF THE DISCLOSURE

“DOUBLE TAPERED STEEL WIRE AND METHOD AND APPARATUS FOR CONTINUOUSLY HEAT TREATING THE WIRE”

A double tapered steel wire (S) is evenly heat treated over the entire length thereof. The wire (S) has its constant-diameter straight portion (21, 24) disposed between its opposite end tapered portions (22, 23) each tapered down to its reduced-diameter outer end. In heat treatments, a diameter of the wire (S) is continuously detected by a detection means (3, 6), so that the amount of energy of induction heating applied to the wire (S) is controlled by a control unit (12) in a manner such that the amount of the energy is proportional to a wire diameter of the wire (S) having been detected, whereby heat applied to the wire (S) varies over the entire length of the wire (S). As a result, the wire (S) is quenched and tempered over its entire length in a manner such that the wire (S) thus heat treated has its small-diameter portions (24) and its large-diameter portion (21) differ from each other in tensile strength.